

Narragansett Bay Estuary Program

Attachment A

NBEP FY 2017 Budget

Grant Budget Period 10/01/17 - 09/30/2020

Project Period 10/01/2017 - 9/30/2020

6/26/2017

	FY16 Section 320 Funds			Total
Personnel	Hrs	Rate	\$285,776	\$285,776
Deputy Director (MA)	20	(b)(6)		
Director of Water Quality Programs (MA)	30			
Program Manager (MA)	625			
QA Reviewer (MA)	50			
Information Officer I (MA)	15			
Program Director (RI)	1345			
Environmental Analyst III (RI)	1344			
Environmental Analyst III (RI)	1344			
Assistant Environmental Analyst (RI) part-time	850			
Intern (RI)	300			
Intern (RI)	300			
Fringe			\$118,643	\$118,643
Full time (37.5% of MA Personnel)			\$14,490	\$14,490
Full time (45.0% of RI Personnel)			\$96,086	\$96,086
Part time (24.0% of RI Personnel)			\$8,067	\$8,067
Travel			\$7,300	\$7,300
20 local trips @ \$50			\$1,000	\$1,000
12 regional trips @ \$150			\$1,800	\$1,800
3 national trips @ \$1,500			\$4,500	\$4,500
Equipment			\$0	\$0
Supplies			\$4,592	\$4,592
Contracts			\$47,000	\$47,000
Research Contracts			\$47,000	\$47,000
Other			\$638,781	\$638,781
Professional Services (Watershed Counts)			\$12,500	\$12,500
Professional Services (Priority Projects)			\$7,500	\$7,500
Printing & Production			\$1,300	\$1,300
Postage			\$56	\$56
Copies			\$100	\$100
Advertising			\$325	\$325
Telephone & Internet Service			\$6,000	\$6,000
Conferences and meetings			\$1,000	\$1,000
Conference and meeting registration			\$4,000	\$4,000
Computer support			\$3,000	\$3,000
Equipment Leasing (copier)			\$3,000	\$3,000
Non-federal match			\$600,000	\$600,000
Total Direct			\$1,102,092	\$1,102,092
Indirect (19.5% of Total Direct)			\$97,908	\$97,908
Total Federal Costs			\$600,000	\$600,000
Non-Federal Match			\$600,000	\$600,000
Total Project			\$1,200,000	\$1,200,000
Procurement			\$68,300	\$68,300
FTE's			3.19	3.19

(b)(6)

Fringe Benefits Costs for health and accident insurance, FICA, unemployment, worker's compensation and retirement are based on historical data and are calculated, annually, as a percentage of personnel costs. The fringe rates for NEIWPCC full time staff in MA and RI are 37.5% and 45%, respectively. The fringe rate for NEIWPCC part time staff in RI is 24%.

Travel Travel costs are based on historical data. NEIWPCC travel policies include estimated mileage reimbursement at the federal RS rate and the federal per diem.

Indirect Cost

The Commission utilizes 2 CFR § 200 to determine its indirect rate and submits the appropriate paperwork to EPA HQs. The rate is approved annually by the NEIWPCC Executive Committee and Commission and EPA HQs. NEIWPCC's current approved indirect rate is 20% for FY 2017. NEIWPCC has applied for a 19.5% rate for FY 2018. NEIWPCC applies its approved indirect rate throughout the life of the grant and thus indirect charges may fluctuate. NEIWPCC does not charge indirect on individual contractual projects and subawards of \$100,000 or greater.

Non-Federal Match Match for the 320 funds is provided by RI DEM, RI CRMC, NBC and URI's Coastal Institute. See workplan for details.

Attachment B: Program Narrative
Narragansett Bay Estuary Program Support
NEIWPCC Job Cost Code: TBD

Applicant:	New England Interstate Water Pollution Control Commission (NEIWPCC) 650 Suffolk Street, Suite 410 Lowell, MA 01854
NEIWPCC Project Officer:	Heather Radcliffe Program Manager and Staff Attorney (978) 349-2522 (978) 323-7919 (fax) hradcliffe@neiwpcc.org
USEPA Region 1 Project Officer:	Caitlyn Whittle U.S. EPA Region 1 5 Post Office Square, Suite 100 (OEP06-1) Boston, MA 02109-3912 (617) 918-1748 (617) 918-0748 (fax) whittle.caitlyn@epa.gov
Narragansett Bay Estuary Program Program Director:	Tom Borden Narragansett Bay Estuary Program 235 Promenade Street – Suite 310 Providence, Rhode Island 02908 (401) 633-0552 (401) 230-1798 (fax) tom.borden@nbep.org
QA/QC Plan Required:	Yes
Project Period:	October 1, 2017 – September 30, 2020
Resources Requested:	The total budget requested is \$1,200,000. Attachment A provides the budget summary and itemized budget for the total project cost.
Federal Cost:	Current request: \$600,000
Non-Federal Match:	The attached match documentation has the \$600,000 received by various partners for matching funds.

Background

New England Interstate Water Pollution Control Commission

The New England Interstate Water Pollution Control Commission (NEIWPCC) is a non-profit organization established through an act of Congress in 1947. The agency serves and assists its member states individually and collectively by providing coordination, public education, training, and leadership in the management and protection of water quality in the New England and New York Region. It is a leader in forming strong bonds between the New England and New York State environmental agencies and is unique in its ability to bring diverse interest groups together, create forums, and educate with innovative multi-faceted curriculum.

The Commission is comprised of seven states: Connecticut, Massachusetts, Maine, New Hampshire, New York, Rhode Island, and Vermont. The 35-member Commission consists of five persons from each state including representatives from state health departments, water pollution control boards, and governor appointees who may represent municipal and industrial interests. NEIWPCC's primary role is to integrate the state's individual efforts to improve and maintain water quality in the Northeast. Educating and training environmental professionals as well as communicating water quality concerns and needs to the public are key components of NEIWPCC's mission.

Narragansett Bay Estuary Program

Narragansett Bay is one of 28 estuaries in the country designated by the U.S. Environmental Protection Agency (EPA) as an "estuary of national significance" under Section 320 of the 1987 amendments to the Federal Water Pollution Control Act (Clean Water Act). The National Estuary Program was established in 1987 to protect and restore nationally significant estuaries threatened or impaired by pollution, development, and overuse. The Narragansett Bay Estuary Program (NBEP or Estuary Program) was initially formed in 1985 and was formally included in EPA's National Estuary Program on March 11, 1988. The goal of the Estuary Program is to protect and restore Narragansett Bay and its bi-state watershed, which is shared by Rhode Island and Massachusetts, through collaborative action, sound science, and informed decision-making. The NBEP accomplishes this goal while working with a Steering Committee comprised of numerous stakeholders, representing citizen and environmental groups, academic institutions, and local, state, and federal governments.

In 1993, a Comprehensive Conservation and Management Plan (CCMP) was adopted for Narragansett Bay – a watershed-based plan that addressed a wide range of issues including nutrient enrichment, pathogens, management of special ecological areas, nonpoint source pollution, contaminated sediments, water resource management, living resources management, bay and watershed governance, and monitoring. This original CCMP was updated in 2012 (2012 CCMP) to promote a holistic approach to protecting, enhancing, and restoring the Narragansett Bay and its watershed through partnerships that conserve and restore natural resources, enhance water quality, and promote community involvement and stewardship.

The 2012 CCMP includes a large number of goals that are organized in four sections: Section 1) Protect and Restore Clean Water; Section 2) Manage Land for Conservation and Community; Section 3) Protect and Restore Fish, Wildlife, and Habitats; and Section 4) Manage Climate Change Impacts to Natural Systems. The Steering Committee approved a corrective action plan in 2013 that listed four strategic priority actions from the CCMP to provide a clear short-term focus for the Estuary Program:

- Improve understanding of both the changes in water quality occurring over the next several years in the Bay and its bi-state watershed, including those resulting from nutrient pollutant loadings reductions, and their effects on the Bay ecosystem;
- Facilitate the use of sound science in Bay watershed management decision-making;
- Build capacity among municipalities and local organizations to foster stewardship for environmental engagement with emphasis on the broader adoption of low impact development and improved stormwater management; and
- Facilitate habitat restoration in Narragansett Bay and its watershed, its coastal buffers, and its tributary rivers and streams.

Objectives

NEIWPCC proposes to assist and support the NBEP in implementing the 2012 CCMP and ongoing priority issues. The Narragansett Bay Estuary Program Guiding Principles for Program Management as approved will provide a framework for the proper and effective management of the NBEP. The specific tasks designed to support these objectives are outlined below:

Task 1: Program Management

Task 1a: NEIWPCC Lowell Program Management

NEIWPCC proposes to continue supporting personnel time for NEIWPCC Lowell staff to manage NBEP-related grants and contracts/subawards and supervise NBEP staff. Funding will mainly support a program manager, but also the Director of Water Quality Programs (for oversight of program management support) and the Deputy Director (for preparation of grant applications and paperwork). Specific tasks include, but are not limited to:

- Supervise the NBEP's Program Director, in consultation with the Executive Committee and Steering Committee.
- Coordinate the supervision of all NBEP staff, in consultation with the Program Director, the Executive Committee, and the Steering Committee.
- Coordinate with the Program Director in preparation of the annual work plan and budget.
- Prepare and submit grant applications to U.S. EPA.
- Lead hiring process for all staff positions.
- Set up and manage agreements with RI Department of Environmental Management (RI DEM) and MA Department of Environmental Protection (MassDEP) regarding office space arrangements and technical support, as needed.
- Manage budgets in coordination with the Program Director.
- Execute and manage contracts/subawards in coordination with the Program Director. Submit monthly reports of contracts that have been executed in the previous month to the Federal Funding Accountability & Transparency Act Subaward Reporting System.
- Process invoices and travel reimbursements.
- Communicate with the Program Director and EPA Project Officer on a regular basis.
- Meet with EPA Project Officer annually to coordinate issues between NEIWPCC, NBEP, the states, and EPA Region 1.
- Garner support for NEIWPCC's NBEP commitments from EPA and the states.
- Facilitate coordination with other regional National Estuary Programs and NEIWPCC activities.
- Prepare, with the assistance of the Program Director, and submit quarterly progress reports that describe NBEP activities and outputs.

While NEIWPCC is responsible for managing the grant from EPA, administering contracts/subawards, completing fiscal, subaward, and administrative reports, and overall supervision of the staff, the NBEP Program Director will be the public point of contact for the program.

Task 1a will be accomplished through personnel time of NEIWPCC Lowell staff and NBEP staff.

Task 1b: Work Plan Development and Tracking

NEIWPCC Lowell Staff will:

- Jointly work with the NBEP Program Director and Executive Committee to implement the process and timeline for developing the annual work plans and budgets.
- Jointly with the Program Director, develop the FY18 work plan and budget for approval by the Executive Committee and Steering Committee in June 2018.
- Complete a final FY18 grant application for submission to EPA in July 2018.

The NBEP Program Director will work with NEIWPCC Lowell staff to:

- Develop the FY18 work plan and budget for approval by the Executive Committee and Steering Committee in June 2018.
- Track and report on progress toward completion of work plan deliverables consistent with EPA's National Estuary Program grant requirements.

Task 1b will be accomplished through personnel time of NEIWPCC Lowell and NBEP staff.

Task 1c: Support of NBEP Oversight and Advisory Committees

The Estuary Program's Management Conference includes three major committees: the Steering Committee, the Executive Committee, and the Science Advisory Committee. NBEP staff will support these three committees as well as any other advisory committees or subcommittees (presently there is a grants subcommittee, a communication subcommittee, and a nominating subcommittee) that may be developed as needed, as follows:

The **Steering Committee** serves as a forum for information exchange and a mechanism to enhance coordination among local, state, and federal programs. Membership of the Steering Committee consists of top-level environmental officials representing state government in Rhode Island and Massachusetts, federal agency representatives, environmental groups, academic institutions, and watershed groups. The Steering Committee is responsible for reviewing and providing guidance and direction for the implementation of NBEP program elements. The NBEP Program Director will participate in and serve as primary staff support to the Steering Committee. Staff will schedule quarterly meetings, develop agendas in coordination with the Chair of the Steering Committee, draft meeting minutes, prepare reports on recent activities, provide technical support, channel information, and present recommendations to the Steering Committee for their approval.

The **Executive Committee** is a designated subset of the Steering Committee that conducts the business of the NBEP between Steering Committee meetings and reports to the Steering Committee. The Executive Committee is comprised of the following members: the elected Chair of the Steering Committee, two senior management level staff from state environmental agencies, a non-profit representative from each state, one representative from EPA, one representative from NEIWPCC (as the host institution), and the Chair of the Science Advisory Committee. The NBEP Program Director will participate in and serve as primary staff support to the Executive Committee. Staff will schedule monthly meetings, develop agendas in coordination with the Chair of the Executive Committee, draft meeting minutes, prepare reports on recent activities, provide technical support, channel information, and present recommendations to the Executive Committee for their approval.

The **Science Advisory Committee** is comprised of technical experts, researchers, and resource managers from universities, state and federal agencies, and non-profit agencies throughout the Narragansett Bay watershed. The Science Advisory Committee solidifies science as the foundation of the NBEP. The Science Advisory Committee provides an exchange of information among researchers, technical experts, and natural resource managers; provides valued guidance to the NBEP Steering Committee and staff; and identifies priority applied research needs. In support of the Science Advisory Committee, the NBEP will draw upon the region's considerable expertise, forge new partnerships, and pursue innovative sources of funding to support needed scientific work. The NBEP Program Director will participate in and serve as primary staff support to the Science Advisory Committee. Staff will schedule meetings, develop agendas, draft meeting minutes, provide technical support, channel information, and present recommendations to the committee.

Task 1c will be accomplished through personnel time of NBEP staff.

Task 1d: Program Leadership

NBEP staff must remain up to date on regional and national developments relevant to NBEP mission, programs, and projects; represent NBEP in regional and national forums; and provide internal and external leadership for the Program, ensuring focus and progress on strategic priorities, as well as effective communication and collaboration with and

among partner agencies, organizations, academic institutions, etc. The Program Director will focus on ways to leverage NBEP resources, ensure best use of limited resources, minimize duplication of effort, and optimize public and community-based support.

The Program Director will work with the Steering Committee, the Executive Committee, and subcommittees to continue good governance for the program. Tasks will include:

- Continue to ensure consistency in NBEP's engagement of stakeholders in a bi-state manner.
- Continue to develop partnerships within state, university, and non-profit community.
- Continue to explore public and private partnerships. Examine a range of grant opportunities with the Executive Committee and prepare up to three proposals during the fiscal year.
- Continue to capitalize on communication capacity of EPA, NEIWPCC, the Steering Committee, and other partners as set forth in the draft 3-year communications plan. The draft communications plan will be finalized by the Communication Subcommittee. Quarterly reports to the Committee will track press releases, panels and speaking events, website updates and usage, message block content sharing with partners, and other communication activities.
- Continue to update the new website regularly to enhance communication efforts. The website will be updated on a continuous basis. It is expected to include the latest scientific publications, new science and policy reports, news, and other topics of interest.
- Continue to work with other programs in the National Estuary Program to collaborate and share information.

Task 1d will be accomplished through personnel time of NBEP staff.

Milestone Schedule for Task 1

Task 1a: NEIWPCC Lowell Program Management	October 1, 2017 – September 30, 2019
Task 1b: Work Plan Development and Tracking	
Completion of FY17 Work Plan	June 2017
Work Plan Tracking	October 1, 2017 – September 30, 2019
Task 1c: Support of NBEP Oversight and Advisory committees	
Steering Committee Meetings	Quarterly
Executive Committee Meetings	Monthly or as needed
Science Advisory Committee Meetings	Three Meetings Per Year
Task 1d: Program Leadership	October 1, 2017 – September 30, 2019

Environmental Outputs and Outcomes for Task 1

Work Plan Activity	Deliverable(s) and Lead Staff	Target Date	Environmental Output	Environmental Outcome
Task 1a: NEIWPCC Lowell Program Management	Grant applications; Quarterly progress reports (Program Director and NEIWPCC Program Manager)	Ongoing	Produce quarterly reports to document progress on all program activities and ensure progress on commitments.	Improved water quality, habitat, and resources of Narragansett Bay documented.
Task 1b: Work Plan Development and Tracking	Annual work plan and budget (Program Director and NEIWPCC Program Manager)	Ongoing	Program commitments are documented and tracked using quarterly reporting and SC/EC agenda updates.	Program management is improved.
Task 1c: Support of NBEP Oversight and Advisory Committees	Agendas and minutes (Program Director)	Ongoing	Committee meetings and decisions are	Program management is improved.

			documented through meeting minutes.	
Task 1d: Program Leadership and Governance	Grant proposals and quarterly reports to the Communication Subcommittee (Program Director and NEIWPC Program Manager)	Ongoing	CCMP policies are advanced through Grants Subcommittee and Communication Subcommittee update reports.	Program fiscal capacity and communications are improved.

Task 2: Facilitate Sound Science to Protect and Restore Clean Water

CCMP: Section 1, Goal 6 and 6.1

- Improve information, science and analysis that support management efforts necessary to restore and protect fresh and salt waters.
- Effectively manage, analyze, synthesize and make available data to support management decision-making, characterize environmental condition trends linked to ecological indicators, prioritize investments and communicate to the public. Continue development of data driven analytical tools, e.g., predictive models, biological indices, etc.

The NBEP provides an important forum for fostering both the synthesis of bay-related science, as well as effective communication on increasingly complex environmental issues involving Narragansett Bay. One of the NBEP's most important roles is to champion and facilitate communication and cooperation with its partners throughout the watershed. NBEP's most important recent focus has been the development of the *State of Narragansett Bay and its Watershed* report. This report provides an overview of research on environmental indicators on the status and trends in the health of Narragansett Bay and its watershed (in addition, the study area includes the Southwest Coastal Ponds and Little Narragansett Bay and their respective watersheds).

These indicators include a wide spectrum of issues that the Science Advisory Committee has included in three major categories:

1. Bay and Watershed Stressors

- 1.1 Landscape Stressors (Population, Land Use, Impervious Cover, Nutrient Loading, and Wastewater Infrastructure)
- 1.2 Climate Change Stressors (Temperature, Precipitation, and Sea Level)
- 1.3 Chemical Stressors (Legacy Contaminants and Emerging Contaminants)

2. Indicators of Ecosystem Condition

- 2.1 Bay Ecosystem Indicators (Seagrass, Salt Marsh, Benthic Habitat, Dissolved Oxygen, Chlorophyll, Water Clarity, and Estuarine Fish Communities)
- 2.2 Watershed Ecosystem Indicators (Stream Invertebrates, Freshwater Fish, Water Quality Conditions for Aquatic Life, and Open Space)

3. Indicators of Public Health (Marine Beaches, Water Quality Conditions for Recreation, and Shellfishing Areas)

In this upcoming fiscal year, the primary goal for protecting and restoring clean water is to build upon progress made in the development of the *State of Narragansett Bay and its Watershed* report and to continue to enhance NBEP's role in estuary and watershed science. To achieve this goal, NEIWPC proposes to complete the following sub-tasks:

Task 2a: Bay and Watershed Research Program

This program would fund research needs identified through the *State of Narragansett Bay and its Watershed* report and will solicit research on issues we identified as critical gaps in understanding the watershed. This research funding would provide seed money that could potentially help secure more significant research proposals. The 2015 work plan

(NEIWPCC JCC: 318) included contractual funds for the research grant program. Funding research projects will also help develop new and strengthen existing partnerships with entities involved scientific research and will increase the role that partners can play in watershed science and information. Funding under the Bay and Watershed Research Program will be awarded through a competitive process initiated and facilitated by NBEP and NEIWPCC Lowell staff. Staff will develop and release a request for proposals and a review team will be formed to select projects for funding.

A request for proposals will be posted in August 2017 and selection will be announced in January of 2018. The following is a timeline for this task

- August 18 – Request for Proposals Published
- September 29 - Deadline for Submission of Pre-proposals
- October 16 – Grants Subcommittee Meeting - select those to submit full proposals
- November 22 – Deadline for Submission of Full Proposals
- December 13 – Grants Subcommittee Meeting - select proposals to fund
- January 2018 – Announcement of Awards
- Projects: March 2018 – March 2019 (short projects) or June 2019 (long projects)

Task 2a will be accomplished through personnel time of NBEP staff, NEIWPCC Lowell staff, and contractual services from this year and prior work plan funding.

Task 2b: Bay and Watershed Story Maps

The information developed in the *State of Narragansett Bay and its Watershed* report will be highlighted through a digital story map that highlights Narragansett Bay and its watershed. Story maps use pictures, maps, videos, and narrative to give a more complete picture of an issue. As examples, the University of Connecticut prepared an excellent [story map](#) of the changing landscape, URI's Environmental Data Center worked with the National Park Service to develop a [story map](#) on Superstorm Sandy, and the Padilla Bay Reserve also prepared a [story map](#) on eelgrass.

The 2016 work plan (NEIWPCC JCC: 326) included contractual funds to help develop these story maps. This project would allow us to create a series of story maps on the issues in Narragansett Bay and its watershed by highlighting topics identified in the *State of Narragansett Bay and its Watershed* report. While the goal is to update the report every five years, the use of story maps will importantly provide NBEP with a vehicle to update Bay and watershed indicators as new information becomes available. In addition, it would allow us to take the GIS data and information gathered in the report and included in static maps and make this information available through ArcGIS Online maps on our website. This will allow the public to better navigate the maps and understand the results. Lastly, story maps provide a mechanism to humanize the often abstract aspects of environmental indicators by using stories and photographs to show how Bay and watershed resources have changed and are still important to us all. This task includes staff time to develop the story map on NBEP's website with contractor assistance and staff time to update the website, on a continuous basis, to include the latest scientific publications, new science and policy report, news, and other topics of interest. The website must be regularly revised to incorporate the latest tools for improving accessibility and visibility of information. It is envisioned that the story maps will be organized in the framework developed by the Science Advisory Committee in the Technical Report where the indicators are organized by stressor indicators (climate change, landscape and chemical), condition indicators (Bay and watershed) and public health indicators. As an example, one story map would address the three public health indicators (recreation, beaches, and shellfishing areas) and would illustrate the connection limiting pathogens in local waters and a story about stormwater improvements at Sabin Point beach.

Task 2b will be accomplished through personnel time of NBEP staff and contractual services from prior work plan funding.

Task 2c: Synthesis Paper

The next major issue for the Science Advisory Committee is to develop a synthesis paper based upon the results of the *State of Narragansett Bay and its Watershed* report. A synthesis paper would allow the Estuary Program and

members of the Science Advisory Committee to reflect upon the results in the report. The synthesis paper will be submitted and anticipated to be published in an appropriate journal. It is important for the Estuary Program to publish results in documents designed for broad public consumption and to also publish these findings in academic journals. This project would provide an opportunity to coordinate a small group of researchers and develop a synthesis of our recent efforts. The selected researchers will consider synthesis topics to examine, length of the synthesis paper, and the appropriate academic journals to approach. The milestone schedule below is based upon the anticipated timeline to complete a paper for submission as the timeline for review and publication (if accepted) will depend upon the relevant journal.

Task 2c will be accomplished through personnel time of NBEP staff, contractual services (from prior work plan funding), and the Science Advisory Committee.

Task 2d: Watershed Science and Policy

The *State of Narragansett Bay and its Watershed* report was designed to identify critical gaps in understanding the Bay and its watershed. For each indicator, we are identifying issues that need to be addressed through further scientific synthesis and policy analysis. For example, we would like to develop an estuarine water quality index that would combine various measurements (DO, water clarity, pH, etc.) to better track water quality improvements. In addition, there is a need for the further development of fine resolution impervious cover methods. While the Bay and Watershed Research Program will provide a mechanism to fund some of these efforts, we will be identifying important scientific initiatives that need to be advanced with NBEP staff analysis. For example, numerous partners have requested data and information developed by NBEP in the Technical Report and significant staff effort is needed to coordinate and compile information. Examples of these partnerships include: 1) The National Fish and Wildlife Foundation's collaboration with the National Oceanic and Atmospheric Administration to develop a Coastal Watershed Resilience Assessments for the Narragansett Bay watershed; 2) the Wood-Pawcatuck Watershed Association formed a Wild and Scenic Study Committee to obtain national recognition of the Outstandingly Remarkable Values of seven rivers; 3) Mass Audubon's partnership with URI to examine the ecosystem services of the watershed. In addition, there are policy implications that are emerging from the *State of Narragansett Bay and its Watershed* report that will require a similar effort on policy analysis. Our recent work has included extensive outreach with numerous partners to compile existing data and research on the environmental indicators. In terms of policy, a similar effort is needed to examine what policy and regulatory mechanisms are in place to address issues of concern, discuss these issues with the numerous partners in the study area, and develop a consensus on needed action. This work is needed in the development of goals and targets for water quality and aquatic habitat protection and restoration. Specific deliverables will include an estimate of two to three science and policy papers advanced through NBEP's committees. This staff effort will provide an opportunity to continue to help coordinate the science and policy issues in the Bay and its watershed.

Task 2d will be accomplished through personnel time of NBEP staff.

Task 2e: Priority Projects

The priority project funding will allow the Executive Committee to provide funding to projects that were not anticipated during work plan development. This process allows for the consideration of new projects that align with CCMP goals where a summary of the project is submitted to the Executive Committee in writing for their consideration. The Executive Committee will make funding decisions based on project budget, amount of funding remaining for priority projects at the time of the request, alignment with CCMP goals and work plan priorities, availability of other funding sources, and timeframe in which funding is needed. Because it is expected that these projects will be time sensitive, it is anticipated that the Executive Committee will approve these matters in coordination with input from the Science Advisory Committee, where appropriate.

Task 2d will be accomplished through the Executive Committee and professional services.

Milestone Schedule for Task 2

Task 2a: Bay and Watershed Research Program	October 2017 – September 2019
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Task 2b: Bay and Watershed Story Maps	October 2017 – May 2018
Task 2c: Synthesis Paper	October 2017 – May 2018
Task 2d: Watershed Science and Policy	October 2017 – September 2018
Task 2d: Priority Projects	October 2017 – September 2018

Environmental Outputs and Outcomes for Task 2

Work Plan Activity	Deliverable(s) and Lead Staff	Target Date	Environmental Output	Environmental Outcome
Task 2a: Bay and Watershed Research Program	Contract deliverables (Program Director, NEIWPCC Program Manager, Contracts and Grants Manager, QA Program Manager; proposal review – Staff Scientist and Watershed and GIS Specialist)	January 2018	Advanced research related to the issues in the Bay and its watershed. All research projects will be announced by January 2018.	Improved understanding of science.
Task 2b: Bay and Watershed Story Maps	Approved QAPP (QA Program Manager), Website enhanced with Story Maps (Watershed and GIS Specialist)	May 2018	Public education of ecological indicators for the Narragansett Bay watershed. The website will be updated to include approximately six story maps related to the indicator groupings.	Improved understanding of the ecological health of the Bay and its watershed.
Task 2c: Synthesis Paper	Approved QAPP (QA Program Manager), Submission of paper to an academic or relevant journal (Staff Scientist)	May 2018	Submission of at least one paper examining complex environmental issues in Narragansett Bay.	Improved understanding of the ecological health of the Bay and its watershed.
Task 2d: Watershed Science and Policy	Development of two to three science and policy papers (Staff Scientist and Watershed and GIS Specialist)	Ongoing	Advance at least two research papers related to the issues in the Bay and its watershed.	Improved understanding of science and policy issues.
Task 2e: Priority Projects	New projects that align with CCMP goals (Program Director)	Ongoing	At least one priority project will be selected for improved protection and restoration of the Bay and its watershed.	Improved commitment to protecting and restoring the Bay and its watershed.

Task 3: Manage Land for Conservation and Community by Building Local Capacity

CCMP: Section 2, Goals 6 and 5

- Increase the role of watershed organizations and municipalities to serve as critical partners in watershed management.
- Improve science, information, and communication to support effective land use management

The management of its watershed lands influences the quality of Narragansett Bay. Achieving changes in the way land is developed, whether mandated or voluntary, requires an expanded effort to build the capacity of local governments as well as strengthen the role of watershed and other local organizations as partners in watershed management. Through enhanced outreach coupled with the provision of ongoing guidance and partnerships, it is envisioned that the NBEP can contribute to increasing local stewardship in a manner that builds upon its relationships with local entities including municipalities, watershed organizations and land trusts. Specifically, this includes the following sub-tasks:

Task 3a: Watershed Counts Partnership

Watershed Counts, a collaborative initiative co-facilitated by the University of Rhode Island's Coastal Institute and the NBEP, relies on over 60 partners in RI and MA to work together to evaluate the issues and conditions of the land and waters in and around Narragansett Bay. This collaborative considers the region's interwoven economic and environmental assets, examines the condition of the watershed, and communicates this information to the public and decision makers in order to inform and guide future management, protection, restoration, and development of the watershed. The Watershed Counts reports can be found at www.watershedcounts.org.

For 2016, the Watershed Counts partners decided to continue up the watershed and focused on the importance of headwaters and the people that are helping to protect and restore these important streams and surrounding habitats. For the 2017 report, the Coastal Institute staff is taking the lead to develop the report with a focus on climate change. For the 2018 report, the NBEP and Coastal Institute staff will work with the partners to identify the focus of the report, and will then participate in committee support, report development, and development of the communication strategy for the report.

Task 3a will be accomplished through personnel time of NBEP staff and the Coastal Institute (as the co-coordinators), professional services funds to produce the report, as well as time invested by the Watershed Counts partners.

Task 3b: Southeast New England Program

EPA's Southeast New England Program (Program or SNEP) is a partnership made up of public and private stakeholders collaborating to create a broad ecological and institutional framework for protecting, enhancing, and restoring the waters along southeastern New England. The Program's vision is to restore the ecological health of southeast New England's estuaries, watersheds, and coastal waters and ensure access now and in the future to resilient, self-sustaining ecosystems of clean water, healthy diverse habitats, and associated populations of fish, shellfish, and other aquatic dependent organisms. The Program includes the coastal waters and watershed lands spanning from Westerly, Rhode Island to Pleasant Bay, Massachusetts. The watersheds of Narragansett Bay, Buzzards Bay, the islands, and southern Cape Cod face similar opportunities and challenges and the Program's focus on this geographic area is designed to develop innovative and effective approaches to preserve the region's critical resources.

Staff will continue to serve on the Work Groups which serves as a forum to discuss ideas for potential SNEP activities and priorities and leverage regional support, provide feedback on vision, goals, and future direction of the program, and share lessons learned from their experiences and their local regions that would be helpful for others to know. This involves meetings (approximately quarterly), occasional conference calls, and review of written materials as requested by EPA. In addition, NBEP staff and NEIWPCC Lowell staff continue to assist partners in projects funded by SNEP.

Task 3b will be accomplished through personnel time of NBEP staff and NEIWPCC Lowell staff.

Milestone Schedule for Task 3

Task 3a: Watershed Counts Partnership	October 2017 – July 2018
Task 3b: Southeast New England Program	October 2017 – September 2018

Environmental Outputs and Outcomes for Task 3

Work Plan Activity	Deliverable(s)	Target Date	Environmental Output	Environmental Outcome
Task 3a: Watershed Counts Partnership	Watershed Counts 2018 Report (Program Director)	July 2018	One public focused report will be prepared along with press information to provide updates on issues in the Bay and its watershed.	Improved understanding of the Narragansett Bay watershed.
Task 3b: Southeast New England Program	Participation in meetings; input on written products (Program Director and NEIWPCC Program Manager)	Ongoing	Participation in at least three meetings related to environmental issues in southeastern New England estuaries.	Partnerships are strengthened. Improved understanding of water quality and ecological issues impacting southeastern New England estuaries.

Task 4: Protect and Restore Fish, Wildlife, and Habitats

CCMP: Section 3, Goals 1 and 1.1

- Conserve existing natural landscapes that have been and will be adversely affected by development, climate change, and invasive species
- Focus resources and enhance land protection efforts by conservation agencies and organizations on less-developed areas, particularly areas threatened by new sprawl development in both states.

CCMP: Section 3, Goals 2, 2.1, and 2.2

- Restore degraded or lost habitats and habitat functions.
- Improve river connectivity and habitat by removing dams, upgrading culverts and creating structural fish ways to restore free-flowing rivers and anadromous fish passage; implement state fish passage plans.
- Create a coordinated bi-state habitat sustainability strategy with a restoration component and identification of priority projects, comprehensive management principles, and implementation targets for fresh and saltwater ecosystems.

The protection and restoration of coastal and riparian habitat is integral to the stewardship of the Narragansett Bay ecosystem and its associated watershed. The bi-state Narragansett Bay watershed has many partners that are working on restoring critical habitats such as saltmarshes, freshwater wetlands, anadromous fish runs, etc. The Massachusetts Division of Ecological Restoration (MA DER), the Rhode Island Coastal Resources Management Council (RI CRMC), RI DEM, and MassDEP are all working to update coastal and freshwater restoration strategies. Building on the planning work conducted in both MA and RI, the NBEP is well positioned to integrate and articulate habitat priorities on a bi-state watershed basis. NEIWPCC proposes to support facilitation of habitat protection and restoration in Narragansett Bay and its watershed by carrying out the following sub-task:

Task 4a: Watershed Restoration and Protection Projects

An important aspect of our CCMP (as well as our annual habitat reporting to EPA) is to track the acreage or stream miles of projects completed to protect and restore the watershed. Each year NBEP staff compile acres of open space lands preserved, stream miles of fish habitat restored, acres of wetlands restored, and other habitat protection or restoration projects. NBEP staff serves on the selection committee organized by RI CRMC to select grants under the Rhode Island Coastal and Estuarine Habitat Restoration Trust Fund and also works with numerous partners involved in habitat restoration. For the *State of Narragansett Bay and its Watershed* report the NBEP has advanced efforts with numerous partners to examine fish passage and stream continuity and is assisting the New England District of the US Army Corps of Engineers in their Narragansett Bay Restoration Study. The needed next step is a compilation of projects completed over time to better represent the progress made to date. This project would include both the compilation of past and pending projects as well as GIS maps, using the ArcGIS Online platform, to show the restoration efforts retrospectively by location and highlight case studies of these projects. It would provide an update to a habitat portal developed with the leadership of RI CRMC and we would work with numerous partners (CRMC, Save The Bay, MA DER, TNC and others) to highlight habitat protection and restoration. This would be an expansion of NBEP research into past projects as well a new component of the NBEP website. Importantly, this would allow NBEP to promote the important work and investments of NBEP partners in habitat restoration and protection, and identify other potential restoration projects

Task 4a will be accomplished through personnel time of NBEP staff and contractual services from prior work plan funding.

Milestone Schedule for Task 4

Task 4a: Watershed Protection and Restoration Projects	October 2017 - July 2018
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Environmental Outputs and Outcomes for Task 4

Work Plan Activity	Deliverable(s) and Lead Staff	Target Date	Environmental Output	Environmental Outcome
Task 4a: Watershed Protection and Restoration Projects	Approved QAPP (NEIWPCC Program Manager and QA Program Manager); Development of on-line mapping and case studies of habitat protection and restoration projects (Watershed and GIS Specialist)	July 2018	The website will be updated with a new restoration and protection platform to highlight habitat projects.	Enhanced habitat protection and restoration in Narragansett Bay and its watershed.

Non-Federal Match

The Narragansett Bay Estuary Program's Steering Committee includes many partners that are implementing projects that are directly implementing the CCMP. A summary of each non-federal match, to address the grant request of \$600,000, is provided below and match documentation is provided for each source of funds:

Section 320 match of \$600,000

- Narragansett Bay Commission (Bay monitoring staff) - \$150,000
- Rhode Island CRMC (habitat grants) - \$101,573
- Rhode Island DEM (contractual) - \$100,000
- Rhode Island DEM (BWRP grants) - \$168,917
- Coastal Institute (staff) - \$79,510

Appendix A: Contractual/Professional Services Projects

Task	Project Title	Amount	Deliverable(s)	Procurement Type	Timeline
Task 2a	Bay and Watershed Research Program	\$47,000	Research projects to address Technical Report needs	Contracts (RFP to be posted)	October 2017-September 2019
Task 2d	Priority Projects	\$7,500	New projects that align with CCMP goals	TBD	October 2017 – September 2018
Task 3a	Watershed Counts	\$12,500	Watershed Counts 2018 Report	Professional Services (RFQs to be distributed)	October 2017-July 2018

Appendix B: Grant Performance Report (CE96184201)

In addition to the reports submitted quarterly to the EPA Region 1 Project Officer, this report satisfies the obligation to submit an annual performance report as required under the programmatic terms and conditions of the grant.

Appendix C: Grant Performance Report (CE00A00004)

In addition to the reports submitted quarterly to the EPA Region 1 Project Officer, this report satisfies the obligation to submit an annual performance report as required under the programmatic terms and conditions of the grant.

Appendix D: Grant Performance Report (CE00A00127)

In addition to the reports submitted quarterly to the EPA Region 1 Project Officer, this report satisfies the obligation to submit an annual performance report as required under the programmatic terms and conditions of the grant.

Appendix E: Travel Report

In addition to the reports submitted quarterly to the EPA Region 1 Project Officer, this report satisfies the obligation to submit documentation of Clean Water Act §320 Funds Used for Travel as required under the National Estuary Program Funding Guidance.

Appendix F: Outreach Report

In addition to the reports submitted quarterly to the EPA Region 1 Project Officer, this report supplements the previously mentioned reports above.

NARRAGANSETT BAY ESTUARY PROGRAM

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Appendix B: Grant Performance Report (CE96184201)

June 1, 2016 – June 1, 2017

This report provides an overview of the performance under the EPA grant for the Narragansett Bay Estuary Program. It includes activities completed and yet to be completed by the Program staff in Providence, the staff of the New England Interstate Water Pollution Control Commission in Lowell (the Program's host entity), as well as the members of the Program's Steering Committee, Executive Committee, Science Advisory Committee, and subcommittees. This report follows the objectives and tasks as set forth in the approved work plan and identifies any remaining tasks. In addition to the reports submitted quarterly to the EPA Region 1 Project Officer, this report satisfies the obligation to submit an annual performance report as required under the programmatic terms and conditions of the grant.

EPA Grant for the Narragansett Bay Estuary Program

EPA Grant Number: CE96184201
EPA Project Manager: Caitlyn Whittle
NEIWPCC Staff: Heather Radcliffe, Tom Borden, Courtney Schmidt,
Eivy Monroy, and Julia Bancroft.

PROGRAM MANAGEMENT

NEIWPCC Job Cost Code: #0315-001-000

Objective I: Strengthen Program Management

1a: NEIWPCC Lowell Program Management

Activities Met:

- NEIWPCC staff continued managing the grant from EPA in coordination with NBEP's Program Director.
- Attended the NBEP's Executive and Steering Committee meetings.
- NEIWPCC provided all personnel services and staff supervision, grant administration for the EPA work plan and budget, solicitations for third party contracts, subaward management and tracking, quality assurance program review, bookkeeping and accounting services (invoices and travel reimbursements), and grant award administration.

Remaining Tasks: None under this grant

Staff activity under this grant has ended. Staff effort towards this objective is now being reported under Grant CE00A00127 (NEIWPCC job cost code 0326). All tasks complete.

1b: Work Plan Development and Tracking

Activities Met:

- Staff continued to track the work plan in coordination with the Executive Committee.

Remaining Tasks: None under this grant

Staff activity under this grant has ended. Staff effort towards this objective is now being reported under Grant CE00A00004 (NEIWPCC job cost code 0326). All tasks complete.

1c: Support of NBEP Oversight and Advisory Committees

Activities Met:

- NBEP staff supported the work and meetings of NBEP's three oversight committees: the Steering Committee which meets quarterly, the Executive Committee which meets monthly, and the Science Advisory Committee which meets as needed. Two additional subcommittees are used as needed: the Grants Subcommittee to review grant proposals and the Communication Subcommittee to assist with website development and communication needs.

Remaining Tasks: None under this grant

Staff activity under this grant has ended. Staff effort towards this objective is now being reported under Grant CE00A00127 (NEIWPCC job cost code 0326). All tasks complete.

1d: Strengthen Program Leadership and Governance

Activities Met:

- The Estuary Program's Chair formed a small committee to develop and help adopt Guiding Principles for the Estuary Program.

Remaining Tasks: None under this grant

Staff activity under this grant has ended. Staff effort towards this objective is now being reported under Grant CE00A00127 (NEIWPCC job cost code 0326). All tasks complete.

Objective II: Facilitate Sound Science to Protect and Restore Clean Water

2a: Status and Trends Report

Activities Met:

- NBEP staff works with numerous partners to develop a draft of the *State of Narragansett Bay and its Watershed* report.
- The Science Advisory Committee met and reviewed approaches and draft documents for the *State of Narragansett Bay and its Watershed* report.
- EPA Headquarters contractor, Emily Shumchenia, assisted in the development of two chapters for the report: estuarine benthic habitat and climate change implications for fish species.

Remaining Tasks: None under this grant.

Staff activity related to Status and Trends under this grant has ended. Staff effort towards this objective is now being reported under Grant CE00A00127 (NEIWPCC job cost code 0326).

2b: Dissolved Oxygen Data Analysis

Activities Met:

- Brown University and Dan Codiga provided reports that were used for the *State of Narragansett Bay and its Watershed* report.

Remaining Tasks: None under this grant. All tasks complete.

2c: Participation in Narragansett Bay Stakeholders Groups

Remaining Tasks: None under this grant

Staff activity under this grant has ended. Staff effort towards this objective is now being reported under Grant CE00A00127 (NEIWPCC job cost code 0326). All tasks complete.

2d: Narragansett Bay Modeling Workshop

Remaining Tasks: None, removed from the work plan.

2e: Priority Projects

Remaining Tasks: None under this grant. All tasks complete.

Objective III: Manage Land for Conservation and Community by Building Local Capacity

3a: Watershed Counts Partnership

Activities Met:

- NBEP staff continued coordination with the Coastal Institute for the development of the 2015 Watershed Counts report with a focus on urban water quality.
- The 2015 report was issued in November and includes case studies on Pawtucket's New Festival Pier for public access, Worcester's tree planting for stormwater management, urban fish monitoring, possible opening of Sabin Point Beach, human health concerns in sustenance fishing, Taunton dam removals to address flooding and unique climate change concerns.

Remaining Tasks: None under this grant

Staff activity under this grant has ended. Staff effort towards this objective is now being reported under Grant CE00A00127 (NEIWPCC job cost code 0326). All tasks complete.

3b: Develop and Strengthen Partnerships

Activities Met:

- The five bolded projects below are receiving funding under this grant:

Protection Grants

1. **Save The Bay - Public Awareness Campaign for Aquidneck Island (\$10,000)**
2. **Save The Bay - Championing the Public's Right to Access the Shore (\$10,000)**
3. **Clean Ocean Access - Increase Public Access of the Shoreline (\$4,030)**

Restoration Grants

1. Town of Hopedale, MA - Hopedale Pond Green Infrastructure Design (\$9,720)
2. Pawtuxet River Authority - River Cleanup Equipment (\$4,300)
3. **Woonasquatucket River Watershed Council - Watershed Restoration Education (\$10,000)**
4. **Pawtuxet River Authority - Blackamore & Cranberry Pond Fish Passages (\$10,000)**
5. Town of North Kingstown - Academy Cove Water Quality Project (\$8,294.37)

The funded projects are summarized below:

Clean Ocean Access was awarded a grant to increase public access to the shoreline of Aquidneck Island to promote, preserve, and ensure recreational uses along the coastline, such as for fishing, boating, swimming, surfing, and walking. They worked in Newport, Middletown, and Portsmouth to protect and monitor the rights-of-way and provide proper signage for the access points. The goal is to use Clean Ocean Access volunteers to provide monitoring twice a month to connect people to and promote stewardship of our shoreline resources. **Clean Ocean Access completed the report and it is available here:**

<http://nbep.org/publications/NBEP-16-165.pdf>

Save The Bay was awarded funding for two projects. The first is a public education and awareness project focusing on the water quality and water supplies for the 67,000 residents of Aquidneck Island. Save the Bay's communications staff developed *Bay Friendly Living*, a publication for residents and businesses on Aquidneck Island. The second project involves a partnership with Rhode Island's Coastal Resources Management Council to conduct site visits to the 221 State-designated shoreline rights-of-way. They documented the sites and current conditions to examine whether public access needs to be restored or improved. This will help identify sites for the State's Adopt-An-Access program. **Save The Bay completed both reports and they are available here:**

<http://www.savebay.org/bayfriendlyliving>

<http://nbep.org/publications/NBEP-16-129.pdf>

Pawtuxet River Authority was also awarded funding for two projects. The project funded under this grant is their fish passage project which is designed to build upon the 2011 Pawtuxet Falls dam removal and assess whether fish passage can be created to encourage spawning in Cranberry Pond in Warwick and Blackamore Pond in Cranston. They examined fish habitat and stream flow conditions at each pond and assess the feasibility of removing barriers and restoring fish passage. **Pawtuxet River Authority completed the report and it is available here:**

<http://nbep.org/publications/NBEP-17-184.pdf>

Woonasquatucket River Watershed Council developed an educational program with a focus on stormwater discharges to restore the urban sections of the Woonasquatucket River and Narragansett Bay. The project included a public school curriculum, *Trout in the Classroom*, for 4th graders, public art with North Providence High School designing storm drain paintings and murals, and youth leadership development for high school students in science education at the Met School in Providence. **Woonasquatucket River Watershed Council completed the project (the final report is on file) and our website includes a spotlight story on this project here:**

<http://nbep.org/our-partners/partner-spotlight/>

Remaining Tasks: None. All tasks complete.

3c: Southern New England Coastal Watershed Restoration Partnership

Activities Met:

- EPA has held conference calls and meetings to discuss next steps for the development of the program.

Remaining Tasks: None under this grant

Staff activity under this grant has ended. Staff effort towards this objective is now being reported under Grant CE00A00127 (NEIWPCC job cost code 0326). All tasks complete.

3d: Sustainable Funding Mechanisms for Stormwater Management

Activities Met:

- Funding was provided under the Southeast New England Program to the West Warwick to assist with the development of a stormwater utility.

Remaining Tasks: None under this grant

Staff activity under this grant has ended. Staff effort towards this objective is now being reported under Grant CE00A00127 (NEIWPCC job cost code 0326). All tasks complete.

Objective IV: Protect and Restore Fish, Wildlife, and Habitats

4a: Identification of Narragansett Bay Watershed Protection and Restoration Priorities

Activities Met:

- We assisted RI CRMC's on a grants review panel for habitat restoration grants under the Coastal and Estuarine Habitat Restoration Trust Fund. Six habitat projects were selected and the two largest projects were the Woonasquatucket River Watershed Council's construction of a nature-like fishway for the Manton Pond Dam and the Nature Conservancy's dam removal to improve fish passage at Bradford Dam in Westerly/Hopkinton.

See: http://www.crmc.ri.gov/news/2016_0304_habrest.html

Remaining Tasks: None under this grant

Staff activity under this grant has ended. Staff effort towards this objective is now being reported under Grant CE00A00127 (NEIWPCC job cost code 0326). All tasks complete.

4b: Strategies for Restoring Diadromous Fish Passage in Rhode Island

Remaining Tasks: None, removed from the work plan.

NBEP – SNE PARTNERSHIP NUTRIENT GRANTS

NEIWPCC Job Cost Code: #0315-002-000

Objective V: Southeastern New England Coastal Watershed Restoration Project's Nutrient Management Grants

Activities Met:

- Of the six grant recipients listed below, all but West Warwick have completed their projects:

1. The City of Newport's Source Water Phosphorus Reduction Feasibility Plan

The City of Newport completed a feasibility study to find ways to control nutrient loadings to St. Mary's Pond and Watson Reservoir. The goals were to restore degraded water quality, protect watershed health, assess pollutant sources, and help to identify and prioritize management efforts to address those sources. These management projects may include structural or non-structural controls to reduce phosphorus loadings. Newport will continue to work with Middletown and Portsmouth to better understand the problem and coordinate control efforts. The outcome of this project is a phosphorus reduction plan that has the potential to reduce phosphorus and improve water quality in the two impaired water bodies. **A final report was completed and is available here:**

<http://nbep.org/publications/NBEP-16-130.pdf>

2. Mass Audubon's Nutrient Reduction through Innovative Land Use Technique

Mass Audubon's project enhanced municipal capacity in the adoption of innovative techniques to reduce and remediate nutrient pollution from stormwater. Mass Audubon used extensive outreach to increase awareness among community leaders and officials throughout the Massachusetts portion of the Narragansett Bay watershed that Low Impact Development (LID) techniques are practical and cost effective. Work with towns included a review of existing municipal programs and recommended revisions in five communities in the Blackstone River Basin. **The full report is available in the contract file and the Mass Audubon materials are here.**

3. Northern RI Conservation District's Moswansicut Reservoir Phosphorus Project

The Moswansicut Reservoir is a drinking water reservoir which is at risk of eutrophication because of phosphorus loading from its watershed. The Northern RI Conservation District's project addressed this issue by improving the aquatic environment of the Moswansicut River with targeted outreach programs, controlling Canada Geese populations, creating a volunteer water quality monitoring program, and creating an in-water nutrient activation treatment plan for the Reservoir. The Northern RI Conservation District also created a toolkit of watershed-based outreach strategies for phosphorus loading reduction. **A final report is on file and an article on the project is available here:**

<https://www.ccori.org/green-groups/2015/6/24/reservoir-project-preaches-phosphorous-awareness>

4. Save The Bay's Ribbed Mussel Nutrient Bio-Extraction Pilot Project

Save The Bay's project examined how efficient ribbed mussels are in nutrient bioextraction as a mechanism for the removal of nitrogen and other nutrients from water bodies. Save The Bay examined the efficiency under three conditions, analyzed the nutrient bioextraction by water sampling, measured rates of bioextraction and compared the rates between treatments, and assessed each animal for their biological efficiency. **Save The Bay completed the project and the final report is available here:**

<http://nbep.org/publications/NBEP-16-131.pdf>

5. URI's Optimizing Performance of Existing Onsite Wastewater Treatment

The University of Rhode Island's project goal was to optimize the performance of existing onsite wastewater treatment system (OWTS) infrastructure within the greater Narragansett Bay watershed to reduce nitrogen inputs. To do this, URI collected data on effluent nitrogen levels and relevant operational variables from advanced OWTS over various time scales, developed a statistical model that predicts optimum effluent levels, used the model results to adjust variables in under-performing systems, measured changes in effluent levels in response to changes, and identified field tools to measure operational variables to help service providers optimize nitrogen removal. URI also developed outreach education materials to transfer project findings. **A final report was completed and is available here:** <http://nbep.org/publications/NBEP-17-178.pdf>

6. West Warwick's Stormwater Utility Implementation and Hardig Brook Restoration

The Town of West Warwick's project aims to improve water quality by preparing up to five best management practice (BMP) designs to budget-level design phase, select one of the BMPs for permitting, full design, and implementation based on cost-benefit analysis, and then permit and construct the selected structural BMP. West Warwick will also develop and implement a stormwater utility for the Town and measure water quality benefits related to implementation of structural BMPs. **An extension was requested in order to allow municipal discussion of utility issues.**

Remaining Tasks: Ongoing

Contractual obligations remain for the active contract with West Warwick to complete the project. Staff activity under this grant has ended. Staff effort towards this objective is now being reported under Grant CE00A00127 (NEIWPCC job cost code 0326).

NARRAGANSETT BAY ESTUARY PROGRAM

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Appendix C: Grant Performance Report (CE00A00004) **June 1, 2016 – June 1, 2017**

This report provides an overview of the performance under the EPA grant for the Narragansett Bay Estuary Program. It includes activities completed and yet to be completed by the Estuary Program staff in Providence, the staff of the New England Interstate Water Pollution Control Commission in Lowell (the Program's host entity), as well as the members of the Program's Steering Committee, Executive Committee, Science Advisory Committee, and subcommittees. This report follows the objectives and tasks as set forth in the approved work plan and identifies any remaining tasks. In addition to the reports submitted quarterly to the EPA Region 1 Project Officer, this report satisfies the obligation to submit an annual performance report as required under the programmatic terms and conditions of the grant.

EPA Grant for the Narragansett Bay Estuary Program

EPA Grant Number: CE00A00004
EPA Project Manager: Caitlyn Whittle
NEIWPCC Staff: Heather Radcliffe, Tom Borden, Courtney Schmidt,
Eivy Monroy, and Julia Bancroft.

PROGRAM MANAGEMENT

NEIWPCC Job Cost Code: #0318-001-000

Objective I: Strengthen Program Management

1a: NEIWPCC Lowell Program Management

Activities Met:

- NEIWPCC staff continued managing the grant from EPA in coordination with NBEP's Program Director.
- Attended the NBEP's Executive and Steering Committee meetings.
- NEIWPCC staff reviewed resumes, coordinated the interviewing process, and hired two part-time interns.
- NEIWPCC provided all personnel services and staff supervision, grant administration for the EPA work plan and budget, solicitations for third party contracts, subaward management and tracking, quality assurance program review, bookkeeping and accounting services (invoices and travel reimbursements), and grant award administration.

Remaining Tasks: None under this grant

Staff activity under this grant has ended. Staff effort towards this objective is now being reported under Grant CE00A00127 (NEIWPCC job cost code 0326). All tasks complete.

1b: Work Plan Development and Tracking

Activities Met:

- Staff continued to track the work plan in coordination with the Executive Committee.
- The March 15, 2017 meeting of the Steering Committee included a conditional approval of the 2017 work plan and budget.

Remaining Tasks: None under this grant

Staff activity under this grant has ended. Staff effort towards this objective is now being reported under Grant CE00A00127 (NEIWPCC job cost code 0326). All tasks complete.

1c: Support of NBEP Oversight and Advisory Committees

Activities Met:

- NBEP staff supported the work and meetings of NBEP's three oversight committees: the Steering Committee which meets quarterly, the Executive Committee which meets monthly, and the Science Advisory Committee which meets as needed. Two additional subcommittees are used as needed: the Grants Subcommittee to review grant proposals and the Communication Subcommittee to assist with website development and communication needs.

Remaining Tasks: None under this grant

Staff activity under this grant has ended. Staff effort towards this objective is now being reported under Grant CE00A00127 (NEIWPCC job cost code 0326). All tasks complete.

1d: Program Leadership

Activities Met:

- In March 2016, NBEP's Program Director met with directors of the National Estuary Programs and with staff from EPA Headquarters to discuss National Estuary Program goals.

Remaining Tasks: None under this grant

Staff activity under this grant has ended. Staff effort towards this objective is now being reported under Grant CE00A00127 (NEIWPCC job cost code 0326). All tasks complete.

Objective II: Facilitate Sound Science to Protect and Restore Clean Water

2a: State of the Watershed Report

Activities Met:

- The Science Advisory Committee has provided valuable feedback on draft sections of the *State of Narragansett Bay and its Watershed* report.
- In response to multiple requests for qualifications, we have retained a talented team of professionals to assist with the project.
- Four public meetings were held and extensive written comments were received.

Remaining Tasks: Ongoing. Staff activity under this grant has ended. Staff effort towards this objective is now being reported under Grant CE00A00127 (NEIWPCC job cost code 0326).

2b: Narragansett Bay Summit

Remaining Tasks: None, removed from the work plan.

2c: Watershed Research Contracts

Activities Met:

- The *State of Narragansett Bay and its Watershed* report includes a section in each of the indicator chapters where we identify data gaps and research needs. The Science Advisory Committee provided feedback on these research priorities.

Remaining Tasks: Ongoing. After the completion report, we will complete a request for proposals will be solicited. Staff effort towards this objective is now being reported under Grant CE00A00127 (NEIWPCC job cost code 0326). Contractual funds remain for this task.

2d: Participation in Narragansett Bay Stakeholders Groups

Activities Met:

- We are assisting Mass Audubon with their project on ecosystem services, NatureServe with their Coastal Watershed Resilience Assessment, the Wood-Pawcatuck Watershed Association with

their Wild and Scenic Study Committee, and RI-DEM, Coastal Institute & EMC on the Monitoring Workshop.

Remaining Tasks: None under this grant

Staff activity under this grant has ended. Staff effort towards this objective is now being reported under Grant CE00A00127 (NEIWPCC job cost code 0326). All tasks complete.

Objective III: Manage Land for Conservation and Community by Building Local Capacity

3a: Watershed Counts Partnership

Activities Met:

- The Coastal Institute is developing the 2017 Watershed Counts report with financial support from this grant.

Remaining Tasks: Ongoing. The Coastal Institute is on track to complete the 2017 Watershed Counts report in July.

3b: Southeast New England Program

Activities Met:

- We have volunteered to have staff serve on the three new subcommittees (Policy Subcommittee, Monitoring Subcommittee, and Ecosystem Subcommittee).

Remaining Tasks: None under this grant

Staff activity under this grant has ended. Staff effort towards this objective is now being reported under Grant CE00A00127 (NEIWPCC job cost code 0326). All tasks complete.

3c: Sustainable Funding Mechanisms for Stormwater Management

Activities Met:

- Numerous projects under the Southeast New England Program funding below are identifying stormwater projects to prioritization and funding. An extension of grant funding was provided to the Town of West Warwick to complete a detailed examination of the feasibility of a stormwater funding process.

Remaining Tasks: None under this grant

Staff activity under this grant has ended. Staff effort towards this objective is now being reported under Grant CE00A00127 (NEIWPCC job cost code 0326). All tasks complete.

Objective IV: Protect and Restore Fish, Wildlife, and Habitats

4a: Identification of Narragansett Bay Watershed Protection and Restoration Priorities

Activities Met:

- NBEP's Program Director serves on the grants review committee for CRMC's FY2017 Coastal and Estuarine Habitat Restoration Trust Fund. In February, the Fund approved the following grants:

The Nature Conservancy (\$64,000) – removal of dam and construction of a nature-like step-pool to improve fish passage at Bradford Dam in Westerly and Hopkinton.

Rhode Island Department of Environmental Management (\$40,000) - the Division of Fish & Wildlife will construct a fishway at Factory Brook Dam in South Kingstown, the Sapowet Creek salt marsh adaptation and coastal restoration project (\$19,242) will restore 21 acres of cultivated agricultural field to coastal grasslands in Tiverton; and coastal resiliency improvements will be implemented at Longmeadow coastal access site (\$4,225).

Narragansett Bay National Estuarine Research Reserve (\$20,424) - evaluation of strategies to facilitate salt marsh migration at Sheep Pen Marsh on Prudence Island and (\$19,427) for salt marsh monitoring in Rhode Island for marsh condition in response to sea level rise.

University of Rhode Island's Environmental Data Center (\$17,982) - eelgrass Tier 1 accuracy assessment and monitoring to refine eelgrass maps created in 2016 from aerial photography.

Watch Hill Fire District and Watch Hill Conservancy (\$15,000) - for coastal barrier protection and plant community restoration in the Napatree Point Conservation Area in Watch Hill.

University of Rhode Island (\$15,000) - restoration of diamondback terrapin nesting habitat on the Potowomut River in East Greenwich.

Blackstone Parks Conservancy (\$5,000) - revegetation and slope stabilization in Blackstone Park Conservation District in Providence.

Woonasquatucket River Watershed Council (\$4,700) - urban habitat restoration pilot project installing native plants along the Woonasquatucket River in Providence.

Remaining Tasks: None under this grant

Staff activity under this grant has ended. Staff effort towards this objective is now being reported under Grant CE00A00127 (NEIWPCC job cost code 0326). All tasks complete.

Objective V: Southeast New England Program Grants

NEIWPCC Job Cost Code: #0318-002-000

Activities Met:

- Staff spent substantial time researching compliance with subaward conditions, creating a sub-awards process and forms, reviewing applicant audit submissions, and submitting FFATA subaward reports.
- We received 30 proposals requesting over \$3.5M and invited 16 applicants to submit a full proposal. The Grants Subcommittee advanced a recommendation to the Executive Committee to approve 11 of the 16 grants, awarding over \$815,000 in grants. The projects are summarized below:
- **The Town of Avon, Massachusetts**, is examining stormwater pollution to an important local waterway - Trout Brook. (\$24,000)
- **The Town of Barrington, Rhode Island**, is collecting water quality and sediment data and designing green infrastructure projects in and around Brickyard Pond to address water quality impairments. (\$19,260)
- **Clean Ocean Access, Newport & Middletown, Rhode Island**, will implement a project, *Stormwater pathogens - Find it and Fix it*, to identify sources of pathogens impacting Easton's Beach. (\$45,900)
- **The City of Cranston, Rhode Island**, will plan and build one or more stormwater infiltration projects in the Stillhouse Cove portion of the Providence River. (\$99,100)
- **The Town of East Bridgewater, Massachusetts**, is examining creative solutions to provide limited sewer extensions to serve the densely developed town center. (\$30,000)
- **The City of East Providence, Rhode Island**, will build a stormwater mitigation project at Sabin Point Park on the Providence River to help address elevated bacterial levels. (\$100,000)
- **The Town of Halifax, Massachusetts**, will identify, map, and prioritize the stormwater outfalls and other sources discharging to the East and West Monponsett Ponds where algal blooms have closed beaches and caused fish kills. (\$57,338)
- **The Town of Jamestown, Rhode Island**, will build an innovative stormwater system to protect Sheffield Cove a recreationally important shellfishing ground. (\$118,200)

- **The City of Pawtucket, Rhode Island,** will focus on stormwater mapping and green infrastructure design to prioritize projects for the City's 45 stormwater outfalls. (\$83,510)
- **The City of Warwick, Rhode Island,** will install a series of bioretention basins and vegetated swales within the medians of Suburban Parkway to help improve water quality in the vicinity of Oakland Beach and City Park Beach. (\$180,000)
- **The Town of Westerly, Rhode Island,** will identify, prioritize, and implement water quality improvements in Little Narragansett Bay and the lower portion of the Pawcatuck River. (\$57,884)

Remaining Tasks: Ongoing

Contractual obligations remain for active contracts with the above recipients to complete projects under the grants program. In addition, staff will continue to manage subawards and revise the internal process as necessary as EPA implements new policies. Staff effort towards this objective is now being reported under Grant CE00A00127 (NEIWPCC job cost code 0326).

NARRAGANSETT BAY ESTUARY PROGRAM

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Appendix D: Grant Performance Report (CE00A00127) **October 1, 2016 – June 1, 2017**

This report provides an overview of the performance under the EPA grant for the Narragansett Bay Estuary Program. It includes activities completed and yet to be completed by the Estuary Program staff in Providence, the staff of the New England Interstate Water Pollution Control Commission in Lowell (the Program's host entity), as well as the members of the Program's Steering Committee, Executive Committee, Science Advisory Committee, and subcommittees. This report follows the objectives and tasks as set forth in the approved work plan and identifies any remaining tasks. In addition to the reports submitted quarterly to the EPA Region 1 Project Officer, this report satisfies the obligation to submit an annual performance report as required under the programmatic terms and conditions of the grant.

EPA Grant for the Narragansett Bay Estuary Program

EPA Grant Number: CE00A00127
EPA Project Manager: Caitlyn Whittle
NEIWPCC Staff: Heather Radcliffe, Tom Borden, Courtney Schmidt,
Eivy Monroy, and Julia Bancroft.

PROGRAM MANAGEMENT

NEIWPCC Job Cost Code: #0326-001-000

Objective I: Program Management

1a: NEIWPCC Lowell Program Management

Activities Met:

- NEIWPCC staff continued managing the grant from EPA in coordination with NBEP's Program Director.
- Attended the NBEP's Executive and Steering Committee meetings.
- NEIWPCC provided all personnel services and staff supervision, grant administration for the EPA work plan and budget, solicitations for third party contracts, subaward management and tracking, quality assurance program review, bookkeeping and accounting services (invoices and travel reimbursements), and grant award administration.

Remaining Tasks: Ongoing.

1b: Work Plan Development and Tracking

Activities Met:

- Staff continued to track the work plan in coordination with the Executive Committee and the June meeting discussed the use of a detailed work plan calendar.
- The March 15, 2017 meeting of the Steering Committee included a conditional approval of the 2017 work plan and budget. The final work plan will be finalized and submitted to EPA and Steering Committee members.

Remaining Tasks: Ongoing.

1c: Support of NBEP Oversight and Advisory Committees

Activities Met:

- NBEP staff supported the work and meetings of NBEP's three oversight committees: the Steering Committee which meets quarterly, the Executive Committee which meets monthly, and the Science Advisory Committee which meets as needed. Two additional subcommittees are used as needed: the Grants Subcommittee to review grant proposals and the Communication Subcommittee to assist with website development and communication needs.
- The Grants Subcommittee has reviewed and provided comments on draft reports before they are finalized.
- A Nominating Subcommittee was formed to develop a slate of nominations for the June Steering Committee meeting.
- The Communication Subcommittee worked to modify the website and to develop a draft three-year communications plan.

Remaining Tasks: Ongoing

1d: Program Leadership

Activities Met:

- In March 2016, NBEP's Program Director met with directors of the National Estuary Programs and with staff from EPA Headquarters to discuss National Estuary Program goals.

Remaining Tasks: Ongoing

Objective II: Facilitate Sound Science to Protect and Restore Clean Water

2a: Bay and Watershed Story Maps

Activities Met: This task has not been initiated.

2b: Synthesis Paper

Activities Met: This task has not been initiated other than discussions at the May Science Advisory Committee meeting.

2c: Watershed Science and Policy

Activities Met: This task has not been initiated.

2d: Priority Projects

Activities Met: This task has not been initiated.

Objective III: Manage Land for Conservation and Community by Building Local Capacity

3a: Watershed Counts Partnership

Activities Met: This task has not been initiated.

3b: Southeast New England Program

Activities Met:

- Staff are serving on the three subcommittees (Policy Subcommittee, Monitoring Subcommittee, and Ecosystem Subcommittee).

Remaining Tasks: Ongoing.

Objective IV: Protect and Restore Fish, Wildlife, and Habitats

4a: Watershed Restoration and Protection Projects

Activities Met: This task has not been initiated.

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Appendix F: Outreach Report July 1, 2016 – June 1, 2017

In addition to the reports submitted quarterly to the EPA Region 1 Project Officer, this report supplements the reports presented in previous appendices.

EPA Grant for the Narragansett Bay Estuary Program

EPA Grant Numbers: CE96184201, CE00A00004 and CE00A00127
EPA Project Manager: Caitlyn Whittle
NEIWPCC Staff: Heather Radcliffe, Tom Borden, Courtney Schmidt,
Eivy Monroy, and Julia Bancroft

Outreach Overview

The following is a summary of the outreach efforts to date over the last year in an overview format with key objectives and in a timeline format:

I: Strengthen Program Management

- Presentations for Management Committee meetings
- Management Committee work session and outreach on communications
- Meetings with EPA Headquarters staff and National Estuary Program Directors

II: Facilitate Sound Science to Protect and Restore Clean Water

- Extensive outreach meetings on *State of Narragansett Bay and its Watershed*
- Coordination for presentations at AAAS, RAE Summit, NEERS and CERF

III: Manage Land for Conservation and Community by Building Local Capacity

- Assistance with Mass Audubon SNEP grant
- Coordination with grantees for small grants program and Southeast New England Program

IV: Protect and Restore Fish, Wildlife, and Habitats

- Assisted on Habitat Grant Selection Committee for CRMC's Coastal and Estuarine Habitat Restoration Trust Fund
- Meetings of the Resilient Taunton Watershed Network

V: Southeast New England Program

- Oversight of projects totaling \$815,000 in grant funding for water quality and watershed restoration
- Assisting in poster development for SNEP event

Timeline

2016

July 7 th	EPA Headquarters call with NEPs
July 11 th	Green Infrastructure Meeting – Rhode Island Foundation
July 14 th	CRMC meeting

July 19 th	Napatree – Coastal Institute
July 26 th	Press Conference – Watershed Counts
August 3 rd	Executive Committee conference call
August 3 rd	CERF conference call
August 10 th	MassDEP sewer area conference call
August 12 th	Dissolved Oxygen and Chlorophyll Meeting
August 19 th	SNEP conference call
September 1 st	Meeting on status and trends reports
September 6 th	Executive Committee meeting
September 7 th	CERF conference call
September 13 th	Resilient Taunton Watershed Network meeting
September 14 th	EC4 Technical Committee meeting
September 14 th	CERF conference call
September 14 th	RI Rivers Council meeting
September 15 th	NEIWPCC Board meeting
September 15 th	NEIWPCC QAPP audit of Clean Ocean Access
September 16 th	SNEP Announcement Event
September 21 st	Steering Committee meeting
September 26 th	Mass Audubon meeting
September 27 th	NEIWPCC Estuary Research meeting
September 28 th	CERF conference call
September 29 th	Paul Hogan meeting
September 29 th	Jamie Vaudrey meeting
September 30 th	Senator Whitehouse Environment and Energy Event
October 4 th	Executive Committee meeting
October 5 th	Narragansett Bay Commission meeting
October 6 th	AAAS conference call
October 6 th	RI Statewide Planning meeting
October 10 th	The Nature Conservancy RI meeting
October 10 th	Research Reserve meeting
October 13 th	Newport water quality meeting
October 14 th	GIS Expert meeting
October 17 th	MassDEP meeting
October 17 th	EPA Narragansett Lab meeting
October 18 th	USGS meeting
October 18 th	Army Corps meeting
October 19 th	Save The Bay meeting
October 19 th	Watershed Counts meeting
October 20 th	NEERS meeting
October 20 th	Resilient Taunton Watershed Network meeting
October 21 st	NEERS meeting
October 24 th	NEIWPCC staff meeting
October 25 th	NEIWPCC staff meeting
October 27 th	RI Department of Health meeting
October 28 th	Mass Audubon meeting
November 1 st	Executive Committee meeting
November 2 nd	CERF conference call
November 3 rd	Environmental Monitoring meeting
November 4 th	Science Advisory Committee - Estuarine Waters
November 7 th	CRMC Habitat meeting
November 9 th	MassDEP meeting
November 10 th	USDA-NRCS meeting

November 10 th	Watershed Counts conference call
November 14 th	Blackstone Data Team meeting
November 16 th	EPA Headquarters call with NEPs
November 18 th	Science Advisory Committee - Climate Change
November 22 nd	SNEP retreat
November 28 th	Science Advisory Committee - Human Health
November 29 th	SNEP conference call
December 1 st	Science Advisory Committee - Watershed Lands & Fresh Waters
December 2 nd	Science Advisory Committee – Full Committee Meeting
December 6 th	Executive Committee meeting
December 7 th	CERF conference call
December 8 th	CRMC Habitat meeting
December 8 th	Watershed Counts conference call
December 8 th	Aquidneck island meeting
December 10 th	National Summit on Estuaries
December 14 th	Steering Committee meeting
December 14 th	RI Rivers Council meeting
December 20 th	EPA Narragansett Lab conference call
December 28 th	Narragansett Bay Commission meeting
December 29 th	EPA Narragansett Lab conference call
January 10 th	EPA Region 1 meeting
January 13 th	RI Marine Fisheries meeting
January 17 th	AAAS conference call
January 24 th	USGS meeting
January 24 th	Chlorophyll group meeting
January 25 th	EPA Narragansett Lab meeting
January 27 th	Communications Subcommittee meeting
January 30 th	Mass Audubon meeting
February 1 st	CERF conference call
February 2 nd	RIDEM meeting
February 7 th	Executive Committee meeting
February 8 th	EC4 meeting
February 8 th	RI Rivers Council meeting
February 14 th	CRMC Habitat meeting
February 14 th	EPA Headquarters call with NEPs
February 19 th	AAAS presentation
March 1 st	Mass Audubon meeting
March 1 st	CERF conference call
March 4 th	MACC conference
March 7 th	NatureServe meeting
March 7 th	Executive Committee meeting
March 8 th	RI Rivers Council meeting
March 9 th	SNEP conference call
March 11 th	Land and Water Summit
March 15 th	Steering Committee meeting
March 17 th	NEERS meeting
March 29 th	EPA Region 1 eelgrass meeting
April 5 th	CERF conference call
April 11 th	Nonpoint Source conference
April 12 th	EPA Lab conference call
April 18 th	USGS meeting
April 24 th	Save The Bay meeting

April 24 th	<i>State of Narragansett Bay and its Watershed</i> public meeting
April 27 th	Brayton Power Plant data meeting
April 27 th	<i>State of Narragansett Bay and its Watershed</i> public meeting
April 28 th	Harvard session on GIS and spatial analysis
May 1 st	Ron Entringer meeting
May 3 rd	CERF conference call
May 3 rd	Mass Audubon meeting
May 3 rd	EPA Headquarters meeting with NEP Directors
May 9 th	Executive Committee conference call
May 9 th	SNEP webinar
May 9 th	NatureServe webinar
May 9 th	RIDEM Healthy Communities Grant meeting
May 10 th	RI Rivers Council
May 15 th	<i>State of Narragansett Bay and its Watershed</i> public meeting
May 16 th	Science Advisory Committee subgroup meeting
May 17 th	Wood-Pawcatuck Wild and Scenic meeting
May 18 th	<i>State of Narragansett Bay and its Watershed</i> public meeting
May 23 rd	EPA Region 1 conference call with NE NEPs
May 25 th	Executive Committee meeting
May 26 th	Science Advisory Committee meeting